CLAIMS

What is claimed is:

1. A method of forming a trap polygon for trapping a color transition edge, where the trap polygon has an associated trap color determined by colors defining the color transition edge, the method comprising:

identifying an interfering edge which intersects a keep away zone defined by the color transition edge; and

forming a trap polygon for trapping the color transition edge including shaping the trap polygon to avoid overlapping a trap polygon corresponding to the interfering edge wherein shaping the trap polygon includes

determining a miter equation that defines a line that is half a distance from the color transition edge and the interfering edge along a length of either edge;

determining movement equations for points on the trap polygon that need to move due to the proximity of the interfering edge, and

shaping the trap polygon including locating each moving point at an intersection of a movement equation and the miter equation.

2. The method of claim 1, where the trap polygon, the color transition edge and interfering edge are vector-based representations.

3. The method of claim 1, where the keep away zone encloses the trap polygon.

4. The method of claim 1, where the keep away zone is within a tile, where the tile includes one or more tile edges and each potentially interfering edge is a tile edge which touches the keep away zone.

5. The method of claim 4, where an interfering edge has a paper color on one side.

6. The method of claim 4, where the color transition edge is defined by two points and defines a transition between a first color and a second color, and the first color is on a same side of the color transition edge as an interfering edge and the second color is on an opposite side of the color transition edge from the interfering edge, and where the interfering edge has a color on one side which would satisfy a trap condition with the first color.

7. The method of claim 4, where the color transition edge is defined by two points and defines a transition between a first color and a second color, and the first color is on a same side of the color transition edge as an interfering edge and the second color is on an opposite side of the color transition edge from the interfering edge, where the interfering edge has an interfering color on one side which would satisfy a trap condition with the second color, and the interfering color and the second color indicate a hypothetical trap color which is significantly different from the trap color.

8. The method of claim 7, where the hypothetical trap color differs from the trap color by more than a vignette color transition.

9. The method of claim 8, where the vignette color transition is approximately 5%.

10. The method of claim 8, where the trap color has one or more trap colorant planes and the hypothetical trap color has one or more hypothetical color planes, and any trap colorant plane which would not overprint differs from a corresponding hypothetical colorant plane by more than the vignette color transition,

where a colorant plane which would overprint would not be printed when printing an object having a color including that colorant plane.

11. The method of claim 1, where forming the trap polygon includes:

shaping one or more edges of the trap polygon so that the trap polygon abuts without overlapping any abutting trap polygon based upon an interfering edge which intersects the color transition edge, and so that the trap polygon does not overlap any object edge which is within the keep away zone but does not intersect the color transition edge or any close trap polygon based upon an interfering edge which is within the keep away zone but does not intersect the color transition edge.

12. The method of claim 1, where trimming the trap polygon includes:

adjusting the trap polygon to avoid one or more interfering edges by adding trimming points to the trap polygon for points on any interfering edges which are in or on the trap polygon; and

removing points from the trap polygon which are outside the trimming points.

13. The method of claim 1, where the trap polygon is defined by a plurality of points which are of one or more types, and wherein shaping the trap polygon includes moving one or more points of the trap polygon according to the type of the point.

14. The method of claim 1 wherein the miter equation defines a line that splits a distance between the color transition edge and the interfering edge.

15. The method of claim 1 wherein if the color transition edge and the interfering edge are parallel and share an end point, the step of determining a miter line includes locating the miter line as a line that is perpendicular to the color transition edge and including the end point.

16. The method of claim 1 wherein if the color transition edge and the interfering edge are parallel and have end points that are within a predetermined distance, the step of determining a miter line includes locating the miter line as a line that is perpendicular to the color transition edge and includes one of the end points.

17. The method of claim 16 wherein the predetermined distance is half a pixel.

18. The method of claim 1 wherein the movement equations have a direction and a length that is at least half a distance from the color transition edge to the interfering edge.

19. The method of claim 1 wherein the step of determining movement equations includes

in a first coordinate space, determining if a point is between the end points that define the color transition edge,

if so, locating a movement equation that passes through the point and is perpendicular to the color transition edge.

20. The method of claim 19 wherein if the point is outside the end points, locating a movement equation that passes through the point and a closest end point on the color transition edge.

21. The method of claim 1 wherein the movement equations are movement vectors that have a direction and a length.

22. The method of claim 21 wherein the movement vectors length is at least half a distance between the color transition edge and the interfering edge along the entire length of both edges.

23. A method of adjusting a trap polygon for trapping an edge in view of an identified interfering edge, the method comprising the steps of:

determining a miter equation that is half a distance from the color transition edge and the interfering edge along the length of either edge;

determining movement equations for points on the trap polygon that need to move due to the proximity of the interfering edge, and

shaping the trap polygon including locating each moving point at an intersection of a movement equation and the miter equation.

24. A method of forming a trap polygon for trapping a color transition edge, the method comprising:

identifying an interfering edge which intersects a keep away zone defined by the color transition edge;

calculating a line on which traps from the color transition edge and the interfering edge would optimally abut one another; and

shaping a trap polygon using the line.

25. A computer program for forming a trap polygon for trapping a color transition edge, where the trap polygon has an associated trap color determined by colors defining the color transition edge, the computer program tangibly stored on a medium, including instructions operable to cause a computer to:

identify an interfering edge which intersects a keep away zone defined by the color transition edge; and

form a trap polygon for trapping the color transition edge including shaping the trap polygon to avoid overlapping a trap polygon corresponding to the interfering edge wherein shaping the trap polygon includes

determining a miter equation that defines a line that is half a distance from the color transition edge and the interfering edge along a length of either edge;

determining movement equations for points on the trap polygon that need to move due to the proximity of the interfering edge, and

shaping the trap polygon including locating each moving point at an intersection of a movement equation and the miter equation.

26. A computer program for forming a trap polygon for trapping a color transition edge, the computer program tangibly stored on a medium, including instructions operable to cause a computer to:

identify an interfering edge which intersects a keep away zone defined by the color transition edge;

calculate a line on which traps from the color transition edge and the interfering edge would optimally abut one another; and

shape a trap polygon using the line.